IN THE CLAIMS

1-35. (canceled)

36. (currently amended) The method of claim ~~35~~ 66 wherein the step of administering is via the oral route.

37. (previously added) The method of claim 36 wherein the bacterium is top-dressed on the feed of the ruminant.

38. (currently amended) The method of claim ~~35~~ 66 wherein the step of administering comprises injecting the bacterium subcutaneously.

39. (currently amended) The method of claim ~~35~~ 66 wherein the step of administering comprises injecting the bacterium intradermally.

40. (currently amended) The method of claim ~~35~~ 66 wherein the step of administering comprises injecting the bacterium intramuscularly.

41. (currently amended) The method of claim ~~35~~ 66 wherein the step of administering is via the nose.

42-65. (canceled)

66. (new) A method of inducing immunity to pneumonic pasteurellosis in ruminants, comprising the step of:

administering to a ruminant a live *P. haemolytica* bacterium which (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which induces antibodies which neutralize biologically active leukotoxin, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

67. (new) A method of inducing immunity to pneumonic pasteurellosis in ruminants, comprising the step of:

administering to a ruminant a lyophilized *P. haemolytica* bacterium, wherein a live form of the lyophilized bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which induces antibodies which neutralize biologically active leukotoxin, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

68. (new) The method of claim 67 wherein the step of administering is via the oral route.

69. (new) The method of claim 68 wherein the lyophilized bacterium is top-dressed on the feed of the ruminant.

70. (new) The method of claim 67 wherein the step of administering comprises injecting the lyophilized bacterium subcutaneously.

71. (new) The method of claim 67 wherein the step of administering comprises injecting the lyophilized bacterium intradermally.

72. (new) The method of claim 67 wherein the step of administering comprises injecting the lyophilized bacterium intramuscularly.

73. (new) The method of claim 67 wherein the step of administering is via the nose.

74. (new) A method of inducing immunity to pneumonic pasteurellosis in ruminants, comprising the step of:

administering to a ruminant a lyophilized and reconstituted *P. haemolytica* bacterium, wherein a live form of the lyophilized and reconstituted bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which induces

antibodies which neutralize biologically active leukotoxin, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

75. (new) The method of claim 74 wherein the step of administering is via the oral route.

76. (new) The method of claim 75 wherein the lyophilized and reconstituted bacterium is top-dressed on the feed of the ruminant.

77. (new) The method of claim 74 wherein the step of administering comprises injecting the lyophilized and reconstituted bacterium subcutaneously.

78. (new) The method of claim 74 wherein the step of administering comprises injecting the lyophilized and reconstituted bacterium intradermally.

79. (new) The method of claim 74 wherein the step of administering comprises injecting the lyophilized and reconstituted bacterium intramuscularly.

80. (new) The method of claim 74 wherein the step of administering is via the nose.

81. (new) A method of inducing immunity to pneumonic pasteurellosis in ruminants, comprising the step of:

administering to a ruminant a killed *P. haemolytica* bacterium, wherein a live form of the killed bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which induces antibodies which neutralize biologically active leukotoxin, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

82. (new) The method of claim 81 wherein the step of administering is via the oral route.

83. (new) The method of claim 82 wherein the killed bacterium is top-dressed on the feed of the ruminant.

84. (new) The method of claim 81 wherein the step of administering comprises injecting the killed bacterium subcutaneously.

85. (new) The method of claim 81 wherein the step of administering comprises injecting the killed bacterium intradermally.

86. (new) The method of claim 81 wherein the step of administering comprises injecting the killed bacterium intramuscularly.

87. (new) The method of claim 81 wherein the step of administering is via the nose.

88. (new) A feed for ruminants which comprises a live *P. haemolytica* bacterium which (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which induces antibodies which neutralize biologically active leukotoxin, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

89. (new) A feed for ruminants which comprises a lyophilized *P. haemolytica* bacterium, wherein a live form of the lyophilized bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which induces antibodies which neutralize biologically active leukotoxin, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

90. (new) A feed for ruminants which comprises a lyophilized and reconstituted *P. haemolytica* bacterium, wherein a live form of the lyophilized and reconstituted bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which induces antibodies which neutralize biologically active leukotoxin, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

91. (new) A feed for ruminants which comprises a killed *P. haemolytica* bacterium, wherein a live form of the killed bacterium (a) expresses no biologically active leukotoxin, (b)

expresses a form of leukotoxin molecule which induces antibodies which neutralize biologically active leukotoxin, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

92. (new) A vaccine for reducing morbidity in ruminants, comprising a live *P. haemolytica* bacterium which (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which induces antibodies which neutralize biologically active leukotoxin, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

93. (new) A vaccine for reducing morbidity in ruminants, comprising a lyophilized *P. haemolytica* bacterium, wherein a live form of the lyophilized bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which induces antibodies which neutralize biologically active leukotoxin, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

94. (new) A vaccine for reducing morbidity in ruminants, comprising a lyophilized and reconstituted *P. haemolytica* bacterium, wherein a live form of the lyophilized and reconstituted bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which induces antibodies which neutralize biologically active leukotoxin, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.

95. (new) A vaccine for reducing morbidity in ruminants, comprising a killed *P. haemolytica* bacterium, wherein a live form of the killed bacterium (a) expresses no biologically active leukotoxin, (b) expresses a form of leukotoxin molecule which induces antibodies which neutralize biologically active leukotoxin, and (c) contains no non-*P. haemolytica* DNA, whereby immunity is induced.